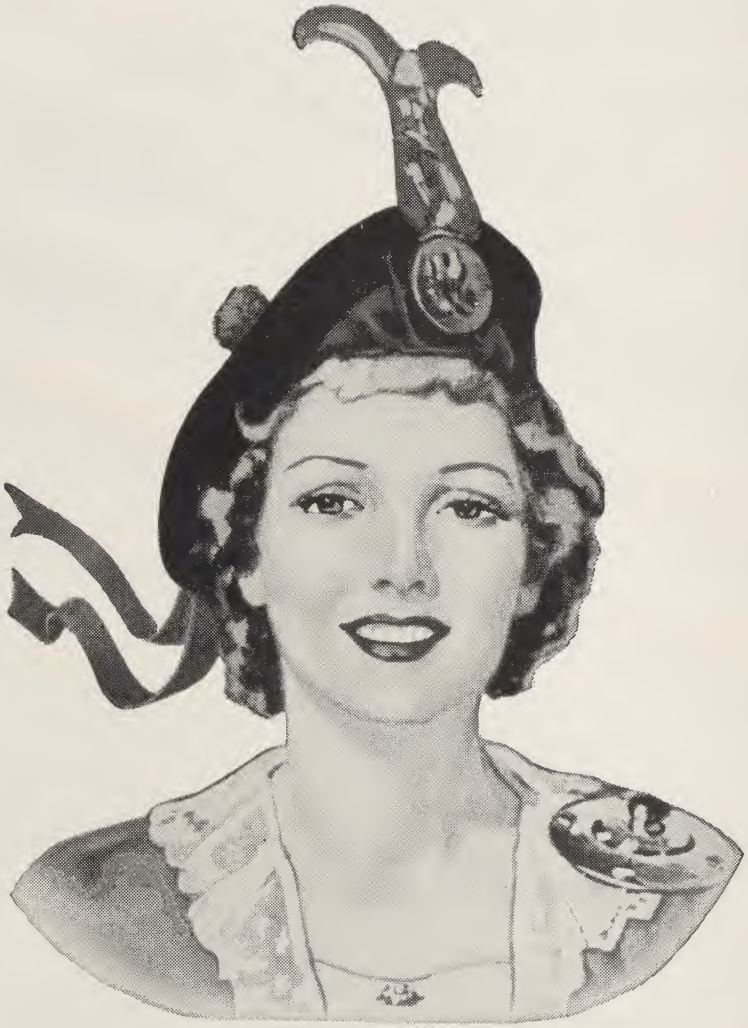
MACDONALD JOURNAL

AGRICULTURE FOOD SCIENCE EDUCATION

NOVEMBER
1969

feeding programmes for dairy beef



THE MACDONALD LASSIE

VOLUME 30, NUMBER 11

NOVEMBER 1969

MACDONALD JOURNAL

The Macdonald Journal is published by Ronald J. Cooke Limited, also publishers of Resort Administration, Bakers Journal and Canadian Beverage Review, 451 Beaconsfield Blvd., Beaconsfield, P.Q. Second class mail registration number 0462. Subscription rates are $7 for two years and $9 for three years in Canada. U.S. and foreign: $10 for two years. Renewals from Macdonald Journal, 451 Beaconsfield Blvd., Beaconsfield, P.Q. (514) 697-2916.

COVER: Autumn foliage and a fallen log make a naturel frame for a tranquil view of the Macdonald College Farm. Photo by Brian M. Smith.

highway safety is everyone's concern

One cannot help but be appalled on reading Quebec's accident statistics each Monday morning. Even worse are the holiday weekend Mondays when, without exception, Quebec has the dubious honour of having the highest number of accidents of any province. It is even more startling to find that most of these accidents are on country roads in rural areas and not on the expressways and autoroutes. Proof of the increasing danger of driving in Quebec is represented in the high car insurance rates of this province — the highest, in fact, in Canada.

In recent months, the Quebec government has supported a mass educational programme based on the "unlucky thirteen" concept with signs supposedly placed at strategic accident points throughout the province. On Labour Day weekend, civil defense trucks were standing by to carry bodies to the nearest emergency hospital entrance. Even with the use of mass education and the involvement of civil defense, Labour Day weekend was more fatal in Quebec than elsewhere in Canada.

If there is going to be an effective change, then positive action must be taken to a point where each individual driver must make some commitment. Until people are concerned, then what is done will not be effective.

In case the Minister of Transport and Communications reads this, there are some suggestions that could help reduce the fatality list.

The first is the institution of a point system under which drivers are liable to suspension of driving priveleges and eventually to cancellation of driving permits for repeated infractions of the highway code. Alberta is the latest province to institute this system. In Nova Scotia, Ontario and Manitoba, where the demerit system has been used for a year or more, safety records have all improved. The system is based on losing a few points for a minor infraction and more points for major infractions. After the loss of several points, the driver's ability to be on the highways is tested. If the infractions persist, then the driver looses his license.

If Quebec instituted this system, then there is no reason why a similar reduction in accidents should not take place.

The second suggestion concerns the need for every adult to take a refresher course in driving every five years. In some communities, these courses are available. Through a system of "each one, teach ten", modern driving courses could be made available for adults at every regional and elementary school. Regardless of how well one thinks his or her driving ability is, the Quebec Motor League's Course in Modern Driving, which, by the way, includes defensive driving, proves that one does not know everything there is to know about driving.

The third suggestion is not directed to the Provincial Government but rather to local organizations in rural areas, organizations such as the Quebec Women's Institutes Inc. If each organization conducted a community survey of strategic country road points where there has been an accident in the last ten years, or where a potential accident threat exists, then these organizations would be providing a useful service for themselves and visitors to their communities.

We are not advocating a "get tough" policy, rather we are pointing out that these suggestions have worked in other provinces. We also believe in the potential of local adults becoming involved in their own driver education. If "Quebec Knows How" to do so many other things, then Quebecers must learn how to reduce the highway accident toll — here, where the need is greatest of all.

The Editor.

Separated from the rest of the farm herd, this young fellow is keeping a wary eye on the camera.

an economic analysis of feeding programmes for dairy beef

by
Dr. G. M. Jones,
Department of
Animal Science.

In the past few months the price of beef has risen markedly. Some of this increase has been returned to the farmer. On December 7, 1968, the average prices paid on the Montreal market for good and medium steers were $26.60 and $25.54 per 100 lb. live weight, respectively. Six months later these prices had risen to $36.54 and $33.69 for the same steers. This $10-11 increase was caused by a shortage of beef. According to market forecasters this price should decline by no more than $2-3 per 100 lb. The same trend was observed in the price of feeder cattle. This would indicate that there is considerable economic opportunity for the dairy man to take advantage of bull calves born every year. A substantial increase in net income could be realized. This report attempts to summarize various feeding regimes possible in a dairy beef program and to compare dairy bulls vs. steers.

In numerous research studies Holstein steers have been compared with Angus and Herefords. In many cases the average daily gain (lb.) for dairy beef equalled or surpassed that of the true beef breeds. Holsteins graded lower (good) than Herefords (lower choice) at similar weights. The difference was the degree of finish. Holstein meat rated acceptable in tenderness, gave the same amount of edible meat but more bone and less fat then beef breeds.

Research on dairy beef (Table 1) conducted at Michigan State University has compared the cost of raising calves to 6 months (approximately 400 lb.) and from 6 months to 1 year (725 lb.) It appears more economical to raise dairy steers for 4 weeks on 6 lb. limited whole milk per day or milk replacer. There was only a slight advantage in pasturing the steers for 5 months. These steers were finished on one of four possible rations (Table 2). The results suggest that feed costs are slightly less when dairy steers are finished on a combination roughage-grain feeding program. These steers could be finished with corn silage as the only source of roughage. By combining the data of Table 1 and 2, it is possible to obtain a relative estimate of the feed and labour cost of raising dairy steers to a market weight of 1000 lbs. These estimates use cost figures from several years ago. Ohio research published in 1963 has estimated that the other costs (excluding feed and labour; including tractor, veterinary, trucks, auto, electricity, telephone, depreciation and repair, taxes, insurance, and interest on investment) were approximately $36/steer on the most efficient feedlots. These figures indicate that there is additional profit by raising dairy bull calves and marketing them as beef rather than selling them at several days of age. Granted that these profit estimates do not include inflation, Dr. E. Lister of the Canada Department of Agriculture has finished Holstein steers on an all-concentrate ration and has shown a margin of $54/steer at 1000 lb. The average daily gain during this period was 2.6 lb. The feed cost for raising the steers from 400-1000 lb. ranged from $83-85/steer in Table 3. In research currently being conducted by Dr. E. Donefer, Department of Animal Science, Macdonald College, Holstein steers were full-fed late-cut corn silage. These steers consumed approximately 37 lb. corn silage/day plus they were allowed 2 lb./day of a protein supplement and minerals. The average daily gain was 2.25 lb. Based on estimates of $8/ton and $5/cwt for corn silage and protein supplement, the feed cost would be $66/steer compared to the $84 mentioned above or an additional profit of $18/steer. Thus, with heavy corn silage feeding, a net profit of $75-90 does not seem unlikely. Raising 20 steers/year could mean an additional annual net income of $1500-1800. However, it should be emphasized that the most efficient

TABLE 1. Feed costs in raising dairy steers to one year of age (Michigan State University)

Age	Feed	Limited Whole Milk for 4 weeks 8 lb./day	Limited Whole Milk for 4 weeks 6 lb./day	Milk Replacer
Birth to 6 mos. (400 lb.)	Whole milk	225 lbs.	170 lbs.	30 lbs.
	Milk replacer	—	—	40
	Concentrate	530	550	530
	Hay	750	750	750
	Feed Cost	$34.25	$32.70	$32.90

		Fall-born calves pastured part of following summer	Spring-born calves not pastured
6 mos. to 1 yr. (725 lb.)	Concentrate	180 lbs.	180 lbs.
	Hay	900	1200
	Corn silage	—	4200
	Pasture	5 mos.	—
	Feed Cost	$36.65	$37.20

Assumed ingredient costs: milk, $4/cwt; replacer, $16/cwt; concentrate, $3/cwt; alfalfa hay, $25/ton; corn silage, $8/ton; pasture, $4/mo.

TABLE 2. Feed and labour costs of finishing dairy steers on all-roughage vs. roughage + grain rations (Michigan State University)

	Roughage		Roughage + grain	
	corn silage + alfalfa hay	corn silage	corn silage + alfalfa hay	corn silage
Initial wt. (lbs.)	700	700	700	700
Final wt. (lbs.)	1000	1000	1000	1000
Ave. daily gain	1.8	2.0	2.4	2.5
Days on feed	170	150	125	120

Total consumption	per day	total	per day	total	per day	total	per day	total
Ground corn	—	—	—	—	7	875	7	840
44% prot. suppl.	1	170	2	300	1	125	1.5	180
alfalfa hay	5	850	—	—	5	625	—	—
corn silage	40	6800	55	8250	25	3125	40	4800
Feed cost ($)		46.33		48.00		46.25		47.10
Feed cost/lb. gain (¢)		15.4		16		15.4		15.7
Labour cost		6.80		6.00		5.00		4.80
Feed + labour ($)		53.13		54.00		51.25		51.90

TABLE 3. Estimate of returns to be achieved from marketing dairy steers at 1000 lbs.

	Roughage		Roughage + grain	
	corn silage + alfalfa hay	corn silage	corn silage + alfalfa hay	corn silage
Feed costs				
100-400 lb.	32.70	32.70	32.70	32.70
400-700 lb.	37.20	37.20	37.20	37.20
700-1000 lb.	46.33	48.00	46.25	47.10
Labour	21.24	20.40	19.44	19.20
Other costs	46.00	46.00	46.00	46.00
Total cost	183.47	184.30	181.59	136.20
Prince received ($32/cwt)	320	320	320	320
Profit	$136.53	$135.70	$138.41	$137.80
Profit from steers over bob veal	106.53	105.70	108.41	107.80

Bob veal estimated at $30 each.

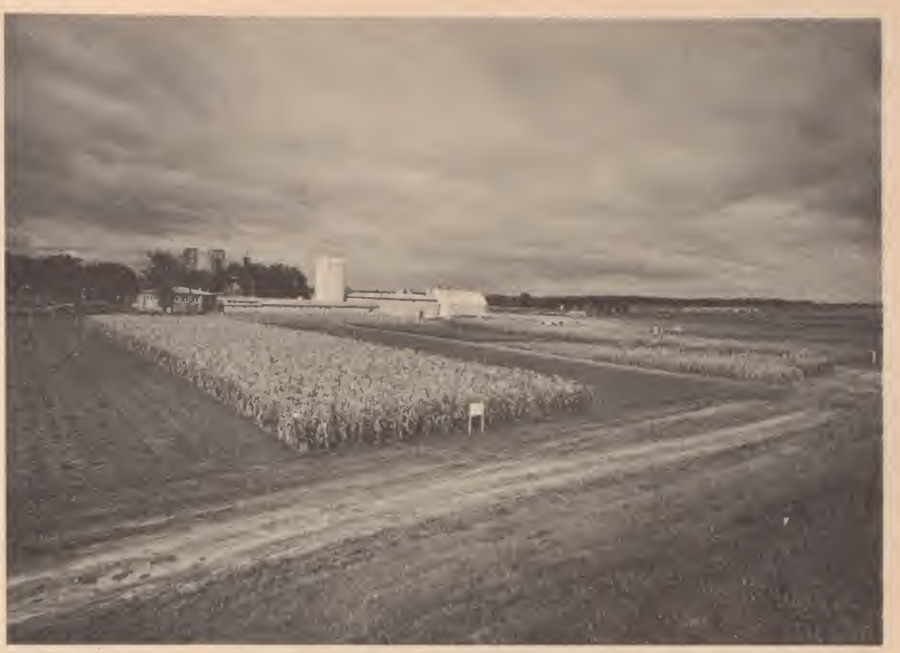
dairyman, one with a high herd average for milk production, probably would be further ahead by devoting his time towards increasing milk production and increasing the efficiency of operation. Iowa State University has suggested that a savings of 3¢/lb. for live beef can be obtained by corn silage feeding over high grain corn rations. This amounted to $15/steer for a 9-month feeding period. These steers on corn silage required a longer finishing period, sold for less/lb., had lower dressing percentages, and, yet, produced more desirable beef carcasses at lower feedlot costs. The price paid to the feedlot, at that time, was $23/cwt. Agway has recently projected costs of $210 for raising dairy beef from birth to market on all-concentrate rations with/a net return of approximately $100/steer.

Dairy steers at Macdonald College and Pennsylvania State University have reached 1000 lb. at 12½-13 months. Therefore, it is possible to market these steers at approximately one year and make room in the feedlot for the next year's steers.

These results all suggest that there is a place for good quality dairy beef. They indicate that additional income is available for dairymen who decide to undertake such a venture, providing it is conducted in an efficient manner. The question of the type of finishing ration becomes all important. The economic value of the various programmes can best be summarized as shown in table 4.

Corn silage, either with or without alfalfa hay, is an excellent feed for finishing dairy steers. Moderate levels of grain should be included. This could be as a protein supplement (2-3 lb./steer/day) or other concentrate mixtures. Greater returns were obtained when 3 lb. were fed per day compared to 6 lb/day, (Penn. State University). However, some protein source must be included, either from plants or plant sources, in combination with urea. Minerals should be provided free-choice. For large corn silage programmes, horizontal silos would reduce the costs. Proper ensiling techniques are essential. However, high-moisture corn could tie up needed silo space. It is preferable that the dry matter content of the corn silage be above 30% (Dr. E. Donefer) since greater gains were observed. Finishing steers on alfalfa hay is not recommended since a longer feeding period is required, and steers are rangy and

(Continued on page 22)



With construction of the Trans-Canada-Highway, College fields had to be rearranged. Shown here are the agronomy test plots.

a farm in transition

by
Rudi Dallenbach,
Macdonald College

Rudi Dallenbach,
Director of the
Macdonald College Farm.

An agricultural college or research station without a farm is like a tree without roots. This has increasingly become true in the last few years at the Macdonald College Farm.

More and more research workers are using the farm facilities as their laboratory. Soil scientists have research plots on different soil types located throughout the farm. Post-graduate students are working on the rooting distribution of corn plants and the resulting phosphorus uptake. The rate of evaporation of water from ploughed versus unploughed fields in early spring is being studied. Others are studying the effect of phosphorus forms on corn growth. The Agricultural Engineering Dept. is deeply involved in research work and a long range farm improvement programme. The evaluation of plastic drain pipe is taking place on one location, wind power utilization on another. The whole farm drainage programme is being designed and executed by this Department, using students during the summer months. Liquid manure disposal is studied using three systems such as a vacuum tank, gravity tank and an irrigation system and sprinkler. Over the last few years, time-motion studies and systems analysis have been carried out on forage mechanization. Even though the Agronomy Department has their own experimental areas, many research workers are assisting in the preparation of demonstration plots on the farm and with the decisions on the farm's cropping program.

As in the past, the Animal Science Department is the department most deeply involved in research work on the farm. Studies and experiments are continuously underway involving sheep, swine, beef and dairy cattle. Synchronization of estrus in swine, sheep and beef cattle has been practised for some time. An extensive swine-cross-breeding program is presently underway involving over 100 sows. Beef production studies using Holstein steers, bulls and heifers have been going on and will continue this winter. Forage evaluation studies are carried out by workers concerned with nutrition. The recently completed Large Animal Research Center houses a modern surgery unit where research workers experiment with the culture and transfers of ova. Other workers are concerned with the control of parasites in cattle and sheep. And last but most important to the farm community is the Centre for Continuing Education which is using facilities at the farm for courses, farm visits, and demonstrations. Some 16,000 school children visited Macdonald College Farm last year. Farm Days and other activities involved another 4,000 visitors.

In order to facilitate all these increased activities and still operate a farm which can usefully contribute to teaching and to demonstration, a number of extensive changes had to be introduced.

land use

The loss of some 90 acres of productive farm land to the construction of the Trans-Canada Highway and the access roads to the college campus has precipitated a change in our cropping program. Two years ago it was decided to rearrange the layout of all

the fields. Using a soil map the fields will be patterned parallel with the soil types in the respective areas. More uniformity in crop production, larger fields, and easier access should be the major improvements. Over 12,000 feet of tile were laid in this area by summer students working for the Agricultural Engineering Department. In the next few years these fields will be seeded down to forage crops particularly suited to the various soil types. The practice of continuous corn production on the same land will be continued. Due to the nature of soil conditions (stone free, sandy, black muck), minimum tillage for corn has proven very economical and resulted in bumper crops.

Some 75 acres of pasture land has been renovated over the past 2 years. This land will be used for the production of grain and silage corn. Two large ponds were built to provide water for the beef herd, fire protection and irrigation.

forage production.

Not unlike many other areas, the production of corn has also revolutionized our forage program. Over 100 acres of corn were planted and harvested annually as silage corn in the last few years. For the first time this year some 30 tons of high moisture grain corn will be harvested for a feeding experiment.

The other major sources of forage are alfalfa, brome and alfalfa timothy. The bulk of this crop is stored in the form of haylage. Some hay is still produced on the farm, but the trend is to minimize hay production as storage facilities for chopped forage become available.

farm buildings and facilities.

In order to make better use of increased forage production and the more highly mechanized harvesting methods, it was decided to construct a feedlot for dairy cattle. The feedlot is fully mechanized with two cement stave silos measuring 24′ x 60′ and 20′ x 60′ respectively. Silo unloaders and a mechanized feed-bunk facilitate push-button feeding. A liquid manure tank of 92,000 gallons capacity provides for the storage of manure. This open feedlot operated successfully for the past two years with dairy cattle being turned out all winter for a short time every day, weather permitting. Future plans are to cover part of the feedlot with a free-stall barn and a milking parlour. This would allow us not only to feed cows individually in the present barn but also to practice and demonstrate group feeding of dairy cattle in a free-stall setup.

A year ago a horizontal silo measuring 26 x 104 x 10 ft. was constructed at the beef barn. The beef herd was self-fed last winter and experience was gained in this type of management. This winter 60 feeder Holstein will be self-feeding out of this silo. Future plans are to improve on this facility and make it as functional as possible.

During this past summer, the cow stable was renovated and insulated to provide for better ventilation. At the same time 8 comfort stalls were built to add to the demonstrative value of the farm. Renovations are also underway in the calf-barn where individual stalls are being built for managing the calves more efficiently.

The Farm Centre constructed last year has been a real asset in providing space for visiting groups. The various services Macdonald College offers to the farm community are visually presented and a large library of farm publications will be available to visitors.

livestock.

For well over 30 years the Macdonald College Farm maintained a Holstein, an Ayrshire and an Aberdeen Angus herd. The Holstein herd is well known throughout the east for its consistent high production and breeding. In 1960 the College herd won the Holstein Master Breeders Award. In 1966 and 1967 we were proud to receive the Quebec Holstein Trophy for the highest producing herd in this province. The Superior Breeder Award for distinguished achievement in breeding Ayrshire cattle was received in 1960. At the present time the herds are being used for teaching, demonstration, student projects and nutrition experiments. The Angus herd is being used for estrus synchronization and to supply feeder cattle for nutrition experiments.

The swine herd is very extensively used for breeding and nutrition research. Artificial insemination has been practiced here for many years. Double mating cross-breeding, estrus synchronization and nutrition experiments are running concurrently in this herd. Of interest to many visitors are the three management systems we use. Sows are being kept in groups, individual pens and tied by the neck.

The sheep flock had its ups and downs over many years. In the last few years, however, increased interest by many researchers in sheep production has led to the construction of new facilities. Sheep are primarily used for nutrition research and out-of-season breeding experiments.

The changes that have taken place, we feel, have helped to create a better balance between the fields of research and a working farm — both of which are necessary if an agricultural campus is to fulfil its proper function.

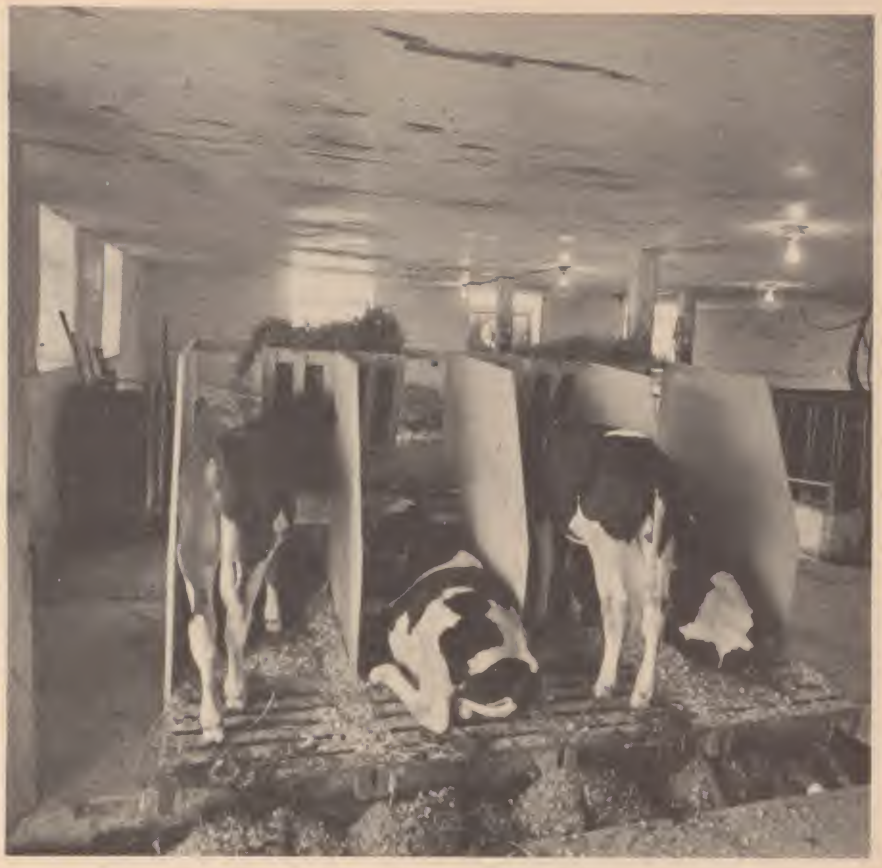
MACDONALD COLLEGE FARM

SEPT. 1969

140 ACRES HAY
120 ACRES CORN
110 ACRES PASTURE

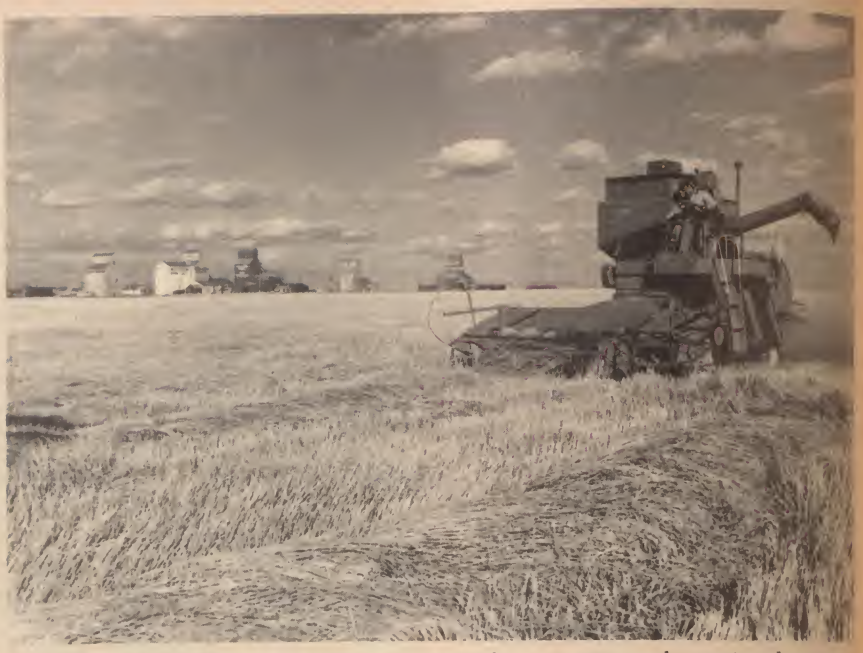
LIVESTOCK

149 HOLSTEIN — 60 MILKING
99 AYRSHIRE — 34 MILKING
67 ANGUS
224 SHEEP
687 HOGS



ABOVE: Eight comfort stalls in the cow barn and individual stalls in the calf barn are all part of the recent renovations on the Farm.

BELOW: About 4000 visitors a year tour the Farm. Of special interest is the dairy barn used in research.



"A farmer controlling a combine, for example, is continuously sensing the status of his machine, of the crop he is harvesting, the state of the soil, the slope of the ground, and so on."

the subtle pollutants

by
Dr. Edward Llewellyn Thomas
Professor of Pharmacology
Associate Professor of
Electrical Engineering
Assistant Professor of Anaesthesia
Acting Director
Institute of Bio-Medical Electronics
University of Toronto

This article was presented
at
The 1969 Annual Meeting
AMERICAN SOCIETY OF
AGRICULTURAL ENGINEERS
NORTH ATLANTIC REGION
Macdonald College, Que.
August 17-20, 1969

The pollutants we don't hear about are the ones that can kill us. Farmers are particularly susceptible to the subtle pollutants — drugs, carbon monoxide, noise and dust. While Dr. Thomas was pleading the farmers case with the agricultural engineers, his message is specific and hard hitting. It will make you think!

We have recently become aware of the chemical devastation which man can create in the world around him through the massive pollution of air and water. He can also contaminate his agricultural and urban environment in more subtle ways, and these may be of considerable importance in the future. As engineers and applied scientists, whose business it is to control and change nature, we must consider now what may happen in the future, and be warned by examples of past errors.

The Thalidomide tragedy is such an example, a drug that was a real pharmacological advance with one disasterous and unforseen side-effect. But the dangers from the introduction of a technological advance into an environment range from a clear-cut example such as Thalidomide to far more subtle factors such as the increase in noise levels at certain frequencies. We have to steer a course between the dangers of the uncontrolled exploitations of a new technology, and the dangers of imposing such rigid controls that progress will cease.

One major change in the environment of the farmer is the appearance of the large, powerful and fast acting machines which he is having to control. He shares this change with all who struggle with or against nature so that the race can exist. They are the real target of the technological revolution. Their role is changing from an energy source to an information processor. We no longer dig post holes with a hand digger; we control an earth auger.

Another change is the appearance of many subtle pollutants. By this I mean those chemical and physical agents whose effects on man are generally slight, but which may become important when he plays his new role, especially when they come in combination with each other.

The essence of the controller's task in the man-machine system is decision-making. A farmer controlling a combine, for example, is continuously sensing the status of his machine, of the crop he is harvesting, the state of the soil, the slope of the ground, and so on. He collects information by direct observation of his environment

(Continued on page 21)

filled and imitation milk

by
Celia L. Fergusson,
School of Food Science

Since filled and imitation milk came on the market in a number of States in the U.S., considerable controversy has arisen concerning these products. The views run the full gamut from the enthusiasm of the proponents of the practice to the opposition of the purists who feel that nature's most perfect food should not be tampered with by man. Added to this clamour is the artful persuasion of the advertising industry motivating the public to purchase the wares of its employer. Entering the picture now are the nutritionists waving warning signals concerning the nutritional value of these products. Caught up in all this is the consumer who, indeed, must be confused.

As these products, with the exception of cream substitutes, are not permitted in Canada, we are not faced with this choice; however, it may be of interest to take a look at the situation.

Filled and imitation milk are two distinctly different products. Filled milk consists essentially of regular milk in which the butter fat has been removed and a vegetable oil put in its place. Imitation milk, on the other hand, is not a milk at all but a white substitute composed of vegetable oil, water, a source of protein, corn syrup solids, sugar, permitted additives and usually some vitamins.

The fats commonly used in these products are soy bean, cottonseed and corn oil, but usually coconut oil is used. As flavour is a problem, coconut oil is found to be more satisfactory in this respect. Coconut oil is characterized by a high total saturated fatty acid content and is low in unsaturated fatty acids. Saturated fatty acids have been shown to raise blood serum cholesterol and are considered to be a factor associated with heart disease. One of the arguments used for the replacement of butter fat is that it is relatively high in saturated fatty acids and so may be an offender in this regard. Obviously, on this hypothesis, when coconut oil is used to replace the butter fat, the situation is unchanged and this argument does not hold up. However, vegetable oils on the whole are low in saturated fatty acids and high in unsaturated fatty acids. Coconut oil seems to be an exception to the general rule. Because of this, there is some feeling that a product using some of the other vegetable oils may yet be devised which would alleviate this factor. Another detrimental characteristic of coconut oil is its deficiency in linoleic acid, a fatty acid shown to be essential for maintaining good nutritional status.

In filled milk, since only the fat has been removed, the nutrients found in regular skim milk remain essentially the same. However, with the removal of the butter fat, the fat soluble vitamins of milk are also gone. In some cases the manufacturer adds A or D or both to the product. Besides, this, skim milk solids are sometimes added so that the protein in these instances is higher than in regular milk.

other factors involved

In imitation milk not only do the factors mentioned with regard to fat pertain, but also a number of others. In this product, the protein used is either sodium caseinate or soy bean protein. Commercial sodium caseinate usually contains 92-94% protein. To overcome flavour problems involved in this, some imitation milks have only 1% or less protein content. Regular whole milk contains not only casein but also the whey proteins. These whey proteins, lactalbumin and lactoglobulin, are even higher in nutritive value than the casein fraction. Whey proteins are not present in imitation milk. The soy bean protein, sometimes used, if properly processed is comparatively high in biological value. However, it is lower than either casein or the total protein of regular milk.

The vitamin content of these products can be manipulated by the manufacturer, and there is considerable variation both in number and amount in different products. Vitamins A and D are usually added and sometimes ascorbic acid (Vitamin C). Regular milk also carries significant amounts of other vitamins known to be required by man, which appear to be absent in imitation milk. There is concern regarding Vitamin E requirements when vegetable oils containing polyunsaturated fatty acids are increased in the diet. Research has shown a relationship of Vitamin E to the metabolic funtion of polyunsaturated fatty acids in the body. As vegetable oils high in polyunsaturated fats may be used in these products, there can be an increased need for Vitamin E which the diet may not be able to meet.

Milk is known to contain a variety of minerals, some in trace amounts. The function in the body carried out by many of these is understood. Research is continually bringing to light new findings on others. Furthermore, it has been shown that a delicate relationship exists between some minerals with others, or with other nutrients. There is no assurance regarding the mineral content of imitation milk.

These products should not be regarded as a nutritional equivalent for milk. A manufacturer of imitation milk makes clear that he is not trying to make milk, but simply another product.

price may be key factor

It is difficult to judge from figures available what public acceptance of these products has been, as circumstances vary in the areas in which they are permitted. An important factor in market acceptability has probably been the price, which is lower than that of regular milk. It is interesting to note that surveys have shown that nearly two-thirds of the people using these milk substitutes believed them to be nutritionally equivalent to milk, although they are sold under fanciful names or marked imitation milk and the ingredients listed on the carton. Some reports indicate that palatability will be a limiting factor in acceptance, particularly in the case of imitation milk. However, findings of a taste panel on filled milk containing coconut oil showed the majority of the participants unable to distinguish it from regular milk.

Nutrition scientists seem to be divided in their views as to the future of these products. A number look to a future filled milk using polyunsaturated fats such as safflower, soya, corn or cottonseed oil, fortified with Vitamin A and D to which iron and other trace nutrients might also be added. This, they feel, would bring better nutrition at less cost to the consumer, especially in the disadvantaged population where price is a greater factor.

Members of the Laval Agricultural Society are seen examining a prototype asparagus harvester; it picks the proper size of spears to cut electronically. At centre in dark coat and glasses is the Laval County agronome, J.A. Lafortune

seeing how the other fellow does it

by O. R. Evans

Commercial vegetable growers on the north side of Montreal Islands are a progressive lot. In spite of the fact that very few of them speak English they get together for a bus trip each year and generally choose some distant vegetable growing area for their visit.

This year the Laval Agricultural Society chose to visit Cumberland County in Southern New Jersey, where thousands of acres are growing a wide variety of garden crops, and hundreds of tons of their harvest finds its way to Montreal, at prices the Laval growers find hard to match.

Early in July this year a busload of 49 growers and their wives left Montreal at 8 a.m. and 500 miles later, at 8 p.m. were in their rooms in Atlantic City. Next morning the first stop was at the New Jersey Research & Development Center at Centerton, not far from Bridgeton, county seat for Cumberland County, which houses the offices of the Center.

The Research Center comprises 265 acres, which at the moment is specializing in research on tomatoes, cucumbers, squash, asparagus, egg plant, peppers and small fruits. The Farm Manager, Mr. R. Shepherd, proudly showed two machines being used to harvest asparagus mechanically. One, a mower type, cuts all the stalks in a row and the product must be sorted as to sizes. The other, not yet completed, is electronically selective, cuts only proper sized stalks. Elsewhere the group saw a machine harvesting snap beans by clear cutting.

In several of the experimental fields the group saw polyethylene mulch, which raises the average soil temperatures, holds moisture and inhibits insect pests. So far the best material used as a mulch is aluminum foil, but it is also the most expensive.

Irrigation is an important subject here, and several types are in use. Generally the 4 and 2 inch aluminum pipes are used on growing crops, but smaller nylon pipes, left permanently in place, are coming into favor. With these controlled amounts of solvent nitrogen fertilizer can be added. At Centerton, and indeed throughout this part of New Jersey, water is not a problem. Farm ponds are a rarity, as the country is laced with rivers and lakes, so that under-drainage is not needed. Wells are numerous and adequate: some down to 200 ft. can supply 50,000 gals per hour. Turbine pumps are favored.

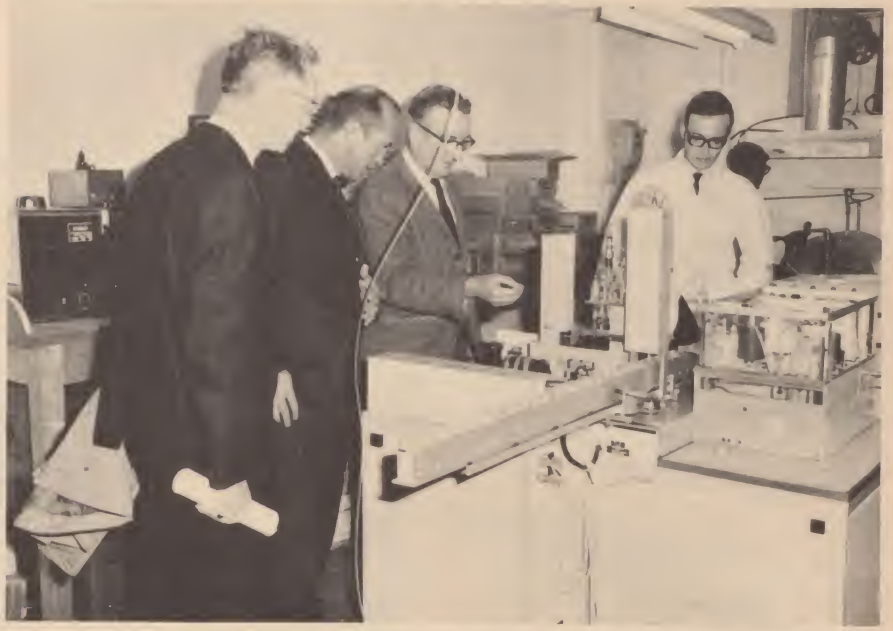
There is much experimental work with transplants. Egg plants, tomatoes, peppers, etc., are started in small paper boxes, using neutral soil made up of a mixture of peat moss and vermiculite. These are moved directly into the field, where the paper soon rots. Of particular interest to the Quebec group was an experiment comparing seeded tomatoes with transplants; Mr Sherherd's opinion was in favor of the former for their climate and soil.

(continued on page 23)

Macdonald Reports

honourable clement vincent visits macdonald during farm days

Honourable Clément Vincent, Minister of Agriculture and Colonization and Dr. H.G. Dion, Dean of the Faculty of Agriculture and Vice-principal of Macdonald College of McGill University.



Dr. H.F. MacRae, Chairman of the Animal Science Department, explains the operation of the intergraded Pro-Milk Tester to the Minister. In the background is chief laboratory technician Goldwyn George.

This laboratory processes 35,000 samples per month for DHAS members reporting accurate butter fat test monthly and protein test every second month. Below, Mrs. Suzanne Côté of the McGill Information Office is obviously interested in Mr. Vincent's impressions of the new plastic tile drainage material. With him, Dr. Bertrand Forest and at his extreme left, Prof. Broughton, Chairman of the Agricultural Engineering Department.

The Honourable Clement Vincent was guest of honour during Macdonald College Farm Days. After Dean Dion addressed several hundred visitors welcoming the Minister of Agriculture and Colonization, Mr. Vincent spoke to those gathered in the Farm Centre. The Minister opened his remarks by expressing his pleasure at having the opportunity to see at first hand along with other farmers what Macdonald College was doing for Quebec farmers. Alternating between French and English, the Minister went on to say he and his Department were fully aware of the valuable support Macdonald had provided Quebec Agriculture. Referring to the founder, Sir William Macdonald, Mr. Vincent lauded the contributions that he and his successors have brought to our rural Quebec community. "Governments alone could not support every aspect of the research and development programmes so necessary if the rural people are to achieve a better standard of living." Mr. Vincent went on to say he was encouraged that other industries had followed the Founder's remarkable example, and are sponsoring various research projects.

Turning specifically to the role of the Ministry of Agriculture and Colonization in the support of research at Macdonald, Mr. Vincent said he and the Government are satisfied that the $300,000 per year the Quebec Agricultural Research Council grants for various research projects is a highly profitable investment. In closing the Minister remarked that, "Agriculture knows no language barriers." He called on everyone involved in agricul-

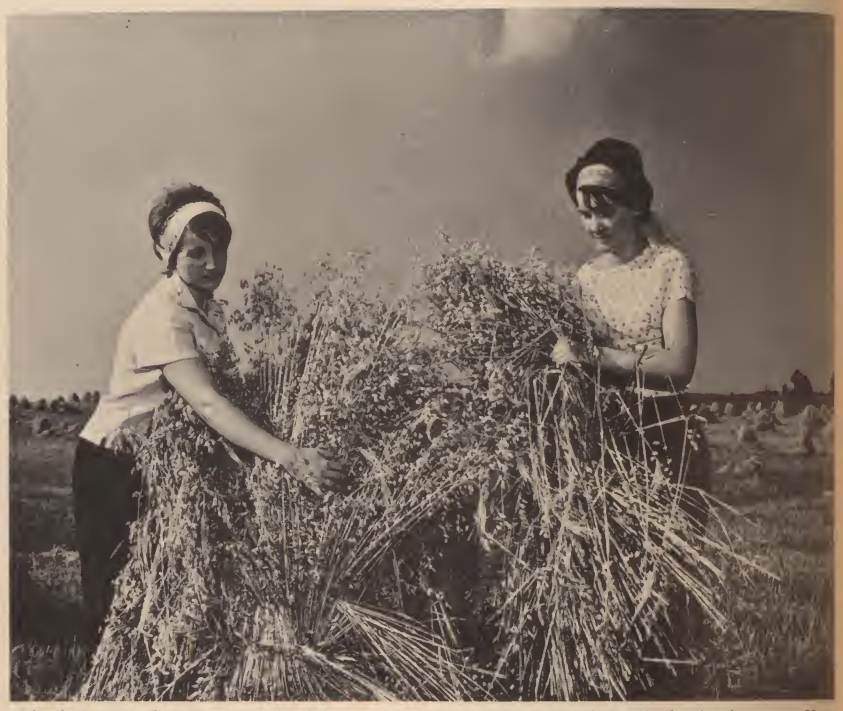
(Cont'd page 22)

THE FAMILY FARM

PUBLISHED IN THE INTERESTS OF THE FARMERS OF THE PROVINCE BY THE QUEBEC DEPARTMENT OF AGRICULTURE AND COLONIZATION

Compiled by
Tom Pickup
Information Service,
Quebec Department of
Agriculture and Colonization

Photographs by
Office du Film du Québec



Ghislaine and Réjeanne Laliberté stooking oats on their father's farm at Honfleur, Bellechasse County.

agricultural region 9

Names, addresses and telephone numbers of the Department of Agriculture and Colonization's staff in the Counties of Abitibi East, Abitibi West, Rouyn-Noranda, and Témiscamingue.

Regional office: 87 Gamble Street West, Box 787, Rouyn, P.Q. Tel: 764-5496. Coordinator: Joseph Laliberté. Administration: Conrad Larouche.

Technical personnel: Farm management, Jean Rosciszewski; Farm credit, vacant; Veterinary medicine, J.E. Chartier, D.V.M.; Economics, vacant; Extension, vacant; Field crops and research, Ferdinand Turgeon; Horticulture, vacant; Livestock, Raymond Gagnon; Poultry, Raymond Gagnon; Agricultural engineering, vacant; Domestic, Berthe St-Georges; Young farmers, vacant; Crop insurance, Maurice Pelletier. Other personnel: 4 office heads and 1 stenographer.

LOCAL OFFICES

ABITIBI EAST

Office: 261 First Avenue West, Amos, Telephone 732-4771. Administration: Sylvio Turcotte.

Representatives Etienne Vigeant, Rodrigue Roy, Amos-Est, St-Marc, St-Maurice, Barraute. La Corne, Vassan, St-Edmont, Lamorandière, Rochebeaucourt, Lac Castagnier, Champneuf, Val D'Or, Senneville.

Tancrede Mathieu, Rodrigue Roy, Amos-Ouest, St-Mathieu, La Motte, Rivière-Héva, Malartic, Cadillac, Ste-Germaine, Preissac, Villemontel, St-Félix, St-Dominique, Rivière Davy, La Ferme, Manneville, Belcourt, Senneterre, Obaska

Inspectors: Aimé Goyette, Gérard Laforte, Gérard Harrison, Léopold Dubé (Rochebeaucourt), P.E. Fleurent (Rochebeaucourt), Conrad Michaud (Senneville), Bernardin DeCarufel (Senneville), Julien Audette (Landrienne), Edmond Provost (Senneterre), Claude Guay (St-Edmond), Léopold Fauchon (St-Félix), J.-Rob. Lambert (St-Maurice), Laurier Marcotte (Barraute), Adélard Pearson (St-Nazaire).

Other personnel: Armand Beaudoin (Farm credit), E. Bolduc and André Gauthier (Public works), Philippe Rondeau (Crop insurance), Lucien Pednault (Dairy products technician), 3 office heads and 3 stenographers.

ABITIBI WEST

Office: 275 Second Street, La Sarre. Telephone 333-2281. Administration: Laurent Letendre

Representatives. Gratien Labrie, Guyenne, Launay, Languedoc, Taschereau, Laferté, Authier-Nord, Authier, Ste-Rose, Renault, Destor, Macamic, St-Janvier, St-Eugène, Ste-Claire, Ste-Germaine, Val St-Gilles

Marc Parent, Gratien Labrie, Dupuy, St-Vital, Beaucanton, Villebois, Val Paradis, Normétal, St-Lambert, La Reine, Clerval, Ste-Hélène, Roquemaure, St-Laurent, Duparquet, Rapide-Danseur, Palmarolle, La Sarre.

Inspectors: Laurier Marcotte, Norm. Tousignant, Z. Baillargeon (Ste Rose), Geo. Bruneau (St-Vital), Arthur Dion (Ste-Hélène), F. Deslongchamps (St-Mathias), Geo. Lachance (St-Janvier), Alph. Leblanc (Val Paradis), Réal Massy (Beaucanton), Amédée Morin (Ste-Germaine).

Other personnel: Lucien Ruelland (Farm credit), G. Pagé, veterinarian, Augustin Levesque (Public works technician), 1 storekeeper, 4 office heads and 4 stenographers.

ROUYN-NORANDA

Office: 115 McQuaig Street West, Box 787 Rouyn. Telephone 762-6591. Administration: Edouard Miljours

Representatives. L.A. Tremblay, Arntfield, Cléricy, Mont-Brun, Delambert, Evain, Farmborough, Granada, McWatters

Odilon Lamontagne, Rémigny, Beaudry, Cloutier, Montbeillard, Rollet, Roulier, Ste-Agnès, St-Roch, Rouyn

Inspectors: Clément Fortier (Mont-Brun), Gérard Labrie (Ste-Agnès), Conrad Falardeau (Granada).

Other personnel: Ernest Francoeur (Public works technician), 1 office head and 3 stenographers.

TEMISCAMINGUE

Office: Notre-Dame Street, Box 50, Ville-Marie, Telephone 49.

Representatives. Charles Ratté, Fabre, Ville-Marie, Guigues, Notre-Dame-du-Nord, Nédelec, Guérin.

Stanislas St-Amant, Béarn, Lorrainville, St-Eugène, Angliers, Laverlochère, Fugèreville, Latulippe, Moffet, Laforce.

Inspectors: P.E. Fleurent, Paul E. Vallières, Roméo Larivière (Laforce)

Other personnel: I. Laliberté; Paul Pépin (Farm credit); R. Tessier (Farm credit); Lucien Marcotte (Drainage technician), 1 stenographer.

Home handicrafts in a Quebec farm-house.

decentralized agricultural administration beneficial

Speaking to representatives of the "Cercle des Fermières" (Farm Women's Clubs) during their recent meeting in Quebec City, Mr Marcel Chevrette, the Department of Agriculture and Colonization's Regional Coordinator in the area south of Quebec, said that, after a year of ironing out the wrinkles, regional agricultural administration under Department's decentralization policy has proved very helpful to Quebec farming. The practical benefits it has brought are clear proof that the policy is a sound one.

Mr Chevrette recalled the agricultural department's aims in decentralizing its administration. Amongst these aims were the consolidation of farms and an increase in their profitability — two things which can only be achieved through personal development. In spite of all the modern technical advances, the individual man or woman remains at the very foundation of any progress in agriculture. The speaker concluded his talk by urging the representatives to excel themselves — as individuals and on the social level, adding that such an effort was bound to help the countrywoman to blossom out as a complete member of Quebec society.

other countries interested in quebec's agricultural decentralization programme

Speaking to Quebec's regional agricultural coordinators at Quebec City recently, the Minister of Agriculture and Colonization, Mr Clément Vincent, said that other countries — including Spain, Australia and Argentina — are taking a keen interest in his Department's policy of administrative decentralization and have expressed a desire for details about its implementation.

The coordinators are the agricultural department's chief administrative and technical representatives in the twelve agricultural regions into which Quebec's farmlands were divided in 1966.

progress made

In sizing up the progess already made with the decentralization programme and assessing its future outlook, Mr Vincent said that the interest taken in the policy by other governments is clear proof of its soundness. He also drew attention to the amount of work accomplished since 1966 and expressed his own satisfaction and that of his Department's staff at the results obtained in the regions as a whole. Quickly reviewing the present situation, he said he was convinced that the

new organization is firmly established and the main lines of action clearly defined. "As far as we are concerned", he said, "we believe that the general situation is encouraging; but we realize that our work has only just begun and there is still an enormous task to be done".

a realistic policy

Mr Vincent also stressed the decentralization policy's favourable reception by the public in general and the farmers in particular. Coming to the core of the matter, he pointed out that the inquiry commission on farm incomes in Ontario had reached the same conclusions as Quebec after a year of research and analyses, and that the commission's recommendations on administrative decentralization along the lines already followed here are almost the only ones the government of Ontario has so far put into effect.

administrative levels

As regards the machinery of decentralization, Mr Vincent pointed out that the policy has not eliminated the different administrative levels of the agricultural department but rather has given them a new dimension and considerably changed their relationships. He said that although in practice a distinction has to be made between the programme's administrative, executive, and "service" aspects, it must not be allowed to split up the teams responsible for various aspects of regionalization; on the contrary it should unite them and encourage their members to think and act in a constant spirit of cooperation. Both at Quebec and within each region, it is essential that we instil and develop in our personnel the team spirit and unity needed to carry out our project.

outlook for the future

As regards the future of the agricultural regionalization programme, Mr Vincent said he felt sure that the progress made in the past year would be continued and intensified — in spite of unavoidable difficulties. He asked the coordinators to continue their work in a spirit of mutual cooperation, while adapting their efforts to regional needs and conditions, as they have done in the past. "It is in this spirit", he concluded, "that we shall maintain methods of mutual effort, overcome the inevitable clashes of personality and confused situations, and achieve the priority aim of decentralization — the well-being of the Quebec farmer".

Poultry raising at Baie-St-Paul in Charlevoix County.

quebec egg-marketing centre subsidized

The Department of Agriculture and Colonization will make a $100,000 grant to the Quebec eggs for consumption producers' federation to help the organization find the $1,300,000 working capital needed to reorganize the marketing of eggs for human consumption.

The Department will also allot $125,000 to compensate the operators of egg-grading stations which will be asked to cease operating, thus bringing its total aid to this specialized field of Quebec agriculture for this year to $225,000.

This Quebec Federation of Producers of Eggs for food (as distinct from eggs for hatching) has 2,700 members and is responsible for a joint marketing plan established in 1966 following a vote which showed 92.2% of the producers to be in favour of it.

The success of the plan has since led the producers to pass regulations organizing egg grading and packing on a regional basis. These regulations, approved by the Quebec Agricultural Marketing Board last December, provide for the setting up of a central selling agency, concentration of grading and packing in 17 stations under contract to the Federation and the elimination of 134 grading stations of various kinds.

The $100,000 will be deposited in whichever bank agrees to lend the Federation the working capital it needs to launch its big project. It will be payable as soon as the central selling agency has begun operating and the contracts have been signed with the regional grading stations.

The $125,000 will be paid out on request to the operators of the 134 superfluous stations in return for a formal agreement not to operate in the province while the centralized egg-marketing system is in effect. Of these stations, 53 are certified commercial concerns, 16 are certified producer-graders, and 65 are uncertified producer-graders.

In confirming this information, the Minister of Agriculture and Colonization, Mr Clément Vincent, said he was glad to be able to help Quebec's egg producers take the grading and marketing of their product in hand. He also hoped that this step by the Government would enable those concerned to overcome their difficulties and cope with a vulnerable, uncontrollable marketing situation where a small surplus brings prices down to below production costs. Mr Vincent stressed that, to be really effective, these measures would have to be backed by the creation of a Canada-wide marketing agency exercising better control throughout the country and thus preventing dumping between provinces.

act to promote farm development

Early in September, a Parliamentary Committee on Agriculture started to study the new "Act to promote the development of agricultural exploitations" (Bill 34) which is designed to combine certain subsidies now being made in other ways.

This bill, one of five recently introduced to amend Quebec's Farm Credit legislation — four of which have already been passed — will become ef-

fective on January 1, 1970, following its approval.

It provides for grants to help farmers develop their farms, through improvements to land and buildings or improvements in general when they are establishing themselves, or through improvements to land and buildings when they are enlarging or consolidating or carrying out an improvement programme.

the grants

A grant of up to $1,000 may be made to a young farmer who establishes himself on an economic farm and up to $3,000 when he carries out an improvement programme. A grant of up to $2,000 may be made when a farmer enlarges his farm and carries out an improvement programme to make it an economic or more profitable enterprise.

The $1,000 grant is payable in annual instalments of $200, and the $2,000 and $3,000 grants are payable on submission of vouchers to the Quebec Farm Credit Bureau as the improvements are carried out.

These subsidies replace the $1,000 grant to young farmers under section 25 of the Agriculture and Colinization Department Act, the $2,000 grant for farm consolidation, and the conditional remission after ten years of one third (up to $3,000) of mortgage loans made by the Farm Credit Bureau or the Farm Credit Corporation. They are also available to farming corporations and partnerships meeting the requirements of the Act.

conditions

Applications for the grants, except the $1,000 to young farmers, must be accompanied by an improvement programme and a statement of how the money will be used.

rationalization

Describing the advantages of the new Act to the agricultural committee, the Minister of Agriculture and Colonization, Mr Clément Vincent, said that the mere fact that it would all be administered by a single body — the Quebec Farm Credit Bureau — was, in itself, a considerable step in the direction of rationalization. Hitherto only one of the grants has been administered by the Bureau.

Mr Vincent pointed out the grants are closely linked with farm credit through their programme of improvements to land and buildings which will often match a programme submitted with a loan application, and also because of the prospective increase in value which they confer on a farm, and especially because the programmes and the use made of the money will be appraised, approved, and supervised by the same persons. He added that the grants will not necessarily be tied to a farm loan (as the conditional remission and aid for farm consolidation now are), and concluded by saying that this rationalization will enable Quebec to make a massive investment in a renewable resource.

The legislation will assist agricultural enterprises by encouraging farm improvements, consolidation, and realistic development. By helping young famers to take over farms and establish themselves, it will also rejuvenate the farming population. In the case of a young farmer who is establishing himself, these grants may total $4,000, thus enabling him to increase his returns at a time when he is most in need of capital to improve his land and raise the productivity of his farm.

two farm credit acts

The Minister of Agriculture and Colonization, Mr Clément Vincent announced today that two important Acts concerning farm credit became effective on August 15th.

The Act to amend the Farm Credit Act raises the maximum amount of a mortgage loan which the Quebec Farm Credit Bureau may grant from $15,000 to $25,000, or up to 90% of the mortgageable value of an economic farm operated by any farmer between 21 and 40 years of age (or by joint borrowers, one of who is in that age group) or by farmers who enlarge their farms or carry out improvement programmes. Previously the ceiling was set at 80% except in the case of settlement loans.

The interest charged on the first $15,000 of loans granted by the Bureau is still maintained at 2½%, leaving the interest payable on the remainder to be set by regulations.

The Act to amend the Farm Credit Act raises the maximum of loans granted by chartered banks and credit unions and eligible for the governments guarantee and 3% interest rebate, from $7,000 to $10,000, and also increases the repayment period of such loans to ten years in cases where it was previously five.

The benefits of both acts have been extended to farming corporations and partnerships and, on certain conditions, tenant farmers may now take advantage of the Farm Improvement Act.

These two acts were among five farm credit bills tabled on the same day, some time before the close of the session.

Two of the five bills, — "An Act to again amend the Civil Code" and "An Act to authorize additional credits for farm loan purposes" (in this case $30,000,000) became effective on June 13th, and another one, entitled "An Act to promote the development of agricultural exploitations", was held over and will shortly be referred to the National Assembly's Agricultural Committee.

The last-named act would allow grants to farmers for developing their farms, either when they are establishing themselves or when they acquire more land. A young farmer between 21 and 40 years of age who is establishing himself on an economic farm may receive grants totalling $4,000, comprising a settlement grant of $1,000 and a grant of $3,000 for farm improvements. A farmer who enlarges his farm may receive up to $2,000 to carry out certain improvements.

Mr Vincent said that this legislation is a first step which will allow the Quebec Government to modernize its farm credit programme and, at the same time, promote the development and consolidation of farms and help young farmers to get established.

As a second step, Quebec proposes to negotiate an early agreement with the Federal Government with a view to introducing a new Federal-Provincial farm credit system thoroughly in keeping with the farmers' needs and strictly respecting the jurisdictions of the provinces.

A flock of sheep on the farm of André Cotnoir at St-Bruno, Témiscamingue in Agricultural Region 9.

quebec's 1969 apple crop at 5,402,000 bushels

This season's apple crop in Quebec is expected to be about 5,402,000 bushels or slightly less (by 202,000 bushels) than last year's.

Mr G. Gilles Lasnier of the Department of Agriculture and Colonization's marketing division says that this estimate, which is for the main early and late varieties, is more accurate than the preliminary forecast published recently.

In general, the apples are smaller and firmer than they were last year and should, therefore, keep better.

young farmers steer and market lamb contest at montreal in february

The Eleventh Beef Steer and Market Lamb Competition for young farmers will be held at Montreal in February at the 18th National Salon of Agriculture.

The contest is sponsored by the Quebec Department of Agriculture and Colonization mainly in order to promote the raising of beef cattle and market lambs by young farmers and gradually reduce the shortage in these branches of livestock production in the province. Contests of this sort also encourage proper use of certain kinds of soil and thus help to put such livestock enterprises on a surer footing.

To enable more young farmers to enter for the contest, the Department provides financial and other aid by paying competitors' travelling and accommodation expenses, the fees of the veterinarian who examines the animals, and the wages and travelling expenses of the help needed to feed and tend them.

Each competitor — a boy or girl between 14 and 20 years old — will show a steer or a group of three lambs raised on the home farm or bought in Quebec before October 1, 1969 — which is also the closing date for entries.

Following the judging, the animals will be sold at an auction sale attended by buyers for various concerns, including butchers, food markets, cooperatives and packing houses.

nazaire parent made honorary life member of canadian seed growers association

At its annual meeting, held in Edmonton, Alberta, the Canadian Seed Growers Association made Mr Nazaire Parent an honorary life member in recognition of the interest he has taken in the CSGA for the past 42 years.

Mr Parent was born at Saint-Isidore in Dorchester County and studied at the Quebec Seminary and later at Laval University where he obtained his bachelor's degree in agriculture.

Three years later, in 1929, he began working for the Quebec Department of Agriculture and was mainly concerned with field crops until 1962.

He was head of the Department's plant production division from 1962 to 1966 and then went to the agricultural economics and programming branch before retiring this year.

Mr Parent was a member of the Quebec Seed Board from 1946 to 1969, member of the Quebec Fertilizer Board, judge of the National Barley Contest for 15 years, and judge of the Provincial Oat Contest for six years.

Women's Institutes

FROM THE OFFICE

NEWS AND VIEWS OF THE QUEBEC WOMEN'S INSTITUTES INC.

Each bit of publicity to catch the reader's eye,
Not only lifts the ego, but helps the W.I.

We are very happy to welcome Mrs. A. Burgess as our part time Secretary. Mrs. Burgess is a W.I. member from the Huntingdon branch and has been employed by Q.W.I. to be in the office on Tuesday and Thursday of each week. Please address all of your correspondence to Q.W.I. Office, Macdonald College, Quebec. Each month we try to run a feature story concerning a special project put on by one of our branches. This month, Austin branch, Brome County, has the honour and such a busy group deserve our congratulations, for they realised $2,137 at their Annual Garden Party. Imagine serving afternoon tea, acting as a super sales force, serving a hot supper, and then having sufficient energy left to play Bingo.

"Footprints in the Sands of Time were never made by sitting down."
E.C.O.

The Austin W.I. held its Annual Garden Party in the Austin Town Hall, Friday, August 8, 1969. A huge crowd attended and $2,137.16 was realized. Our branch now has 36 members. Each and everyone pulls together when a job has to be done. Some have disabilities and cannot attend all meetings, while others work outside the home. However, we just have to phone them, tell them what the branch needs and what they can do to help. They have never let us down, and our garden party could not have been such a success without our friends, (non members) whom we call on at the last minute. So many really look forward to this event, as it still has a country atmosphere. Our biggest project is the Austin W.I. Library situated on Main Street in Magog, which started as an English library and is now fast becoming bilingual. We have 160 English children and 225 French children. Between 300 and 350 books are issued during opening hours (3 times weekly). We award three $50 bursaries to Princess Elizabeth School and make donations to: Princess Elizabeth Cafeteria (lunches for needy), Magog Home and School Association, Austin Youth Association to provide hockey and sport equipment, Austin Children's Christmas Party, Cecil Butters Hospital, a committee who is starting a Senior Citizen's Home.

Our Welfare & Health Convenor's budget is about $120 per year for birthday and get-well cards and appropriate gifts for sick and shut-ins in the community and also little rememberances for the aged at Christmas. Even small children are delighted with a card or little gift from the W.I. when they have to stay in doors while ill.

We start plans for our next garden party immediately after our report is given at the September meeting, so all through the winter we are looking for new ideas, and try not to miss an opportunity to purchase items for Bingo prizes or the Fish Pond.

Each member makes:

Three different home cooking treats for the Cooking Table,

Salads for 10 people or home-made pies for Supper,

Hand-made work (which we have been doing all year) for the Sewing Room,

Donations from our gardens for the Horticultural Table,

Nearly new articles for the Salvage Shop,

Items for Bingo prizes,

Items for Fish Pond.

On the big day:

Our kitchen crew served afternoon tea from 3:30 to 4:30 $40.05

Served Country Style Supper: baked beans, ham, salads, home-made pies from 5:30 to 7:30 $242.50

Horticultural table: busy selling

fresh fruits, vegetables and flowers $63.10

Home Cooking Table was soon cleared, although it was heavily laden $103.30

Book Table: We found many customers for library discards and paper backs $136.36

Our Sewing Room was exceptionally busy where our year's work of handmade articles were sold. One member had undergone eye surgery last fall, yet by garden party time she had made a drawer full of aprons and stuffed toys $693.00

We had a very busy Salvage Shop. One W.I. member mailed out 300 printed cards to people around the vicinity for items they were discarding or could not find a place for $346.65

A young Austin girl took charge of door prize tickets $20.40

Young sons of W.I. members were kept busy selling ice-cream and soft drinks $58.10

Another young son of a W.I. member attended to wants of the small fry at the Fish Pont $12.10

Our big drawing — which all members sell tickets on and everyone has a chance on — 4 prizes: 1. 4′ x 6½′ braided rug; 2. Home-made patchwork quilt; 3. Small radio; 4. Wool blanket $242.50

Cash donations $41.10

After supper 2 large rooms were cleared and tables set up. A member's husband took charge and, with other helpers, everyone enjoyed playing Bingo $138.65

her sister, Mrs. Vail. A brief but interesting report was given by the two delegates who attended the Annual Convention and were pleased to have had the opportunity. A gift was presented to Mrs. Asbil Jr., who is unique in our branch in that she is the first member to be an expectant mother.

SHEFFORD: Granby Hill: Roll Call was "Name a Zodiac sign". Various articles were read by Convenors and a talk was given on the duties of a W.I. member. **Waterloo-Warden:** Roll Call was "Something I have in my medicine chest". Mrs. Bazinet spoke on the U.N. meeting held in New York. A member, leaving to reside in Ontario, was presented with a gift of luggage.

MISSISQUOI: Stanbridge East: held a Fun Meeting at a summer cottage, attended by members and friends, old and young. The roll call was answered by describing a game and various games and contests were enjoyed by all. Prizes were offered for bouquets of wild flowers and for tree leaves mounted and named to be judged at the County Fair. A letter was sent to the local M.L.A. congratulating him for his prompt efforts to restore order after the violence in the recent construction strike.

Only a few reports this month. I am sure you have all been very busy but why not let us all hear what you have been doing.

Hilda M. Graham,
Publicity Convenor.

this month with the q.w.i

BROME: Abercorn: planned their School Fair. **Austin:** held a work meeting. A very successful Garden Party was held, realizing over $2000. **South Bolton:** held a picnic, heard the report of the Annual Convention and a report on the Ditty Bags.

MEGANTIC: A former member, Mrs. Stokoe, brought greetings from a sister branch in Bear Lake, N.S. Three shopping bags and the top for a bed throw were made and handed in by members. A donation for prizes for the local fair was voted to Horticultural Society. Miss Bremner in charge of the Eastern Township section of the vacation Bible School, spoke to the members on Child Evangelism.

MONTCALM: Rawdon: welcomed several guests, including Mrs. Boyce, a non-resident member, who was visiting

j. & p. coats embroidery competition 1970

The J. & P. Coats Co. (Canada) have decided to sponsor another competition for 1970 and sent out the following directive with the purpose of fostering selected Embroidery techniques.

RULES: Only one article per person may be entered, but a choice can be made from the following:

ARTICLES: Tea Cloth (Not less than 34″, not more than 54″, may be square, oblong or round); Place Mats — Set of four; Cushion Cover — Any size or shape; Wall Hanging.

MATERIALS: Any fabric suitable for the article worked. **Must** be worked with **J. & P. Coats Six Strand Embroidery Cotton,** using any number of strands, or **Pearl Cotton** sizes 5 or 8.

TECHNIQUE: Crewel — Counted Thread — Cross Stitch — Drawn Thread — Drawn Fabric — Swedish Darning (Huck Weaving). Stitchery will be the main point considered in judging.

PRIZES: County Level — First Prize $7; Second Prize $5; Third Prize $3; Provincial Level — First Prize $25; Second Prize $15; Third Prize $10.

CLOSING DATE: Counties participating must notify Q.W.I. Office not later than April 1st, 1970.

All correspondence concerning this Competition **must** be addressed to Q.W.I. Office, and **not** under any circumstances with the sponsors, J.P. Coats Co. (Canada).

Miss Emma Kerr is shown here with a quilt she made this summer for Lakefield W.I. Miss Kerr celebrated her 90th. birthday in October. For the past 13 years she has made her home with Mrs. Geo. Peet in Lakefield. Prior to that she was a member of the Pioneer Branch. Miss Kerr is very alert and active and attends all meetings.

the subtle pollutants

cont'd)

and by indirect observation of his machine via its instrument displays. He processes this information and integrates it with information from his memory, and then makes decisions between alternatives to guide him in the movements of his controls. He observes the result of his actions and makes new decisions based on them He is making a series of conditional probability judgments. When he is handling a slow-moving and comparatively weak system, such as a simple tractor plough, he does not have to make decisions very rapidly and the penalty for error is not so great as if, for example, he were flying a crop-spraying aircraft.

When we are making decisions in which risk is involved, we set some criterion which we accept as 'safe'; by this we mean that we judge the probability that an unexpected event will turn a routine procedure into a disaster to be too small for a reasonable man to worry about. When, for example, we are driving on a two-track highway and pull out to pass we do so when we are confident that the probability of the car ahead suddenly veering left, or the car approaching suddenly accelerating, or our own car stalling at a critical moment are vanishingly small. And we are correct almost all the time. But there is an area under the ends of the probability distribution curve which represents the few times we are wrong. The magnitude of this area is set by our decision criteria. If we never pass, that is, if we are complete pessimists, it may be very small for us, though dangerous for those behind us. If we pass at every opportunity, the error area will be larger. An optimist may get killed more often.

There are now in common use a number of drugs which do affect men's judgment in such problems, although usually to a very mild degree. The amphetamines, for example, are euphoriants; so is alcohol in certain doses. The tranquilizers tranquilize. Most of the antihistamines reduce vigilance as well as hayfever. When they are acting on a man sitting comfortably behind a desk these mild effects may be of minor importance. When he is driving a car at sixty miles an hour they may still be of minor importance to the individual, but multiply instances by many million, and the numbers included in the slightly enlarged tails of a distribution curve may amount to hundreds. Such figures are usually beyond statistics, and beyond experimental verification with the methods we have for treating rare occurrences. So we can only speak of them by intuition, and by reasoning from the effects of much larger doses of the drugs on behaviour. Ethanol is a familiar example, and it has been shown that it starts to degrade performance in decision-making based on conditional probabilities even in small doses.

Moreover, the number of such pollutants is increasing, and they are interacting. For example, it has been shown that an antihistamine combined with low oxygen gave a greatly degraded performance. And low oxygen intake comes from mild carbon monoxide poisoning as well as from high altitudes. The acute and chronic effects of cholinesterase inhibitors on one type of specialized agricultural worker, the crop spraying pilot have also been reported. The effects of noise, high temperature, vibration, and other things all affect skilled performance and decision-making capabilities.

As an over-simplification we can think of a polluted environment acting on several different groups of people. One group is living a physically comfortable and comparatively safe working life behind desks. This largely by courtesy of a second group which is controlling increasingly complex systems under conditions of some physical comfort and psychological stress. This latter group includes airline pilots, air traffic controllers, sailor, farmers, — in short, the 'Sons of Martha', — and errors by them are liable to lead to injury and death.

What can we do about it? Research and education are of course necessary, but they cannot lead to an 'engineering solution'. We already know a great deal about the effects of that common pollutant, alcohol, but many of us still have a drink before taking out a car or a combine.

An engineering solution is the design of systems that minimize the effects of these things, regardless of whatever steps the rest of society may be taking to reduce or increase their consumption: in other words, systems that do not make such great demands on our conditional probability decision-making capabilities or require rapid psychomotor responses. We are not designing equipment for use by the healthy young man in the test ground, but for the weary, sweating man, at the end of a long day who is taking an antihistamine for his hay fever and a tricyclic depressant to help him survive his last session with his bank manager, who has been jolted about for twelve hours and whose hearing is reduced by the continuous roar of his machine, whose eyes are red from dust, and who has been receiving a small but continuous quota of carbon monoxide. The 'engineering solution' lies in making equipment and environments that are 'optimum' for him.

macdonald report

(Continued)

ture to renew their efforts to work in cooperation so that each contribution would be made with utmost efficiency and benefit to the farmer.

fellow of the aic

Charles Albert Eaves, head of the plant physiology section at the Canada Agriculture Research Station, Kentville, N.S., was recently named a Fellow of the Agricultural Institute of Canada. Mr Eaves received a B.S.A. (1932) and an M.Sc. (1937) from McGill University.

cda retirement

C.B. Dalton, technical liaison officer for the Scientific Information Section of the Canada Agriculture Research Branch, retired recently after 23 years with the Department. Mr Dalton took his agricultural training at Macdonald College where he obtained his B.S.A. degree in 1931.

macdonald appointments

Three new members have joined the staff of the Department of Agricultural Physics. Dr Anwer Malik joins as Assistant Professor. Associated with the Department of Agricultural Engineering at Macdonald during the last year, he taught several courses in mathematics for the Department of Agricultural Physics. Joining the Department as Assistant Professor is Dr Peter Schuepp. Prior to joining the Department, Dr. Schuepp lectured in physics at Erindale College, University of Toronto. Professor David Burrage, of the McGill Computing Centre, will be on hand several days a week during the first term to provide a new course in mathematics.

The Department of Animal Science has announced the appointment of Dr. James I. Elliot to the position of Assistant Professor. He will be involved in teaching and research on the nutrition of non-ruminant animals.

Recently appointed to the position of Assistant Registrar (Education), Mr. Ray Louttit will be concerned primarily with Admissions and other Registrar's Office operations applicable to students in the Faculty of Education. He is a graduate of Sir George Williams University and recently obtained his M.A. (Educational Administration) from Macdonald.

At the DHAS exhibit, Mr. Vincent was greeted by Gordon Beaulieu, dairy herdsman. Farm Director Rudi Dallenbach conducted the Minister on a tour of the various buildings and field crops. Below, while the farmer worries about feed costs, the researcher about average daily gain, and the consumer about the price she has to pay, the objects of their concern retain their usual contentedness.

feeding programmes for dairy beef

(Continued)

lack finish until 950-1000 lb. Stilbestrol, either in the feed or implanted, results in a 10% increase in gains and greater efficiency of feed conversion. Dairy bulls made faster and more efficient gains than steers (Penn. State Univ.), required 25 fewer days to reach market weight, and were cheaper to feed. The problem of disposition and temperament of bulls was reduced by starting and finishing small groups of 15-20 together. Group size could be reduced to from 7 to 10 bulls if desired.

TABLE 4

Cost/lb. gain (¢)

	Feed	Overhead	Total
Predominantly silage	9.8	5.4	15.2
Silage + grain corn	16.0	6.3	22.3
Silage + ground ear corn	14.2	5.5	19.7
Silage + high moisture grain corn	12.0	5.4	17.4
Silage + high moisture ear corn	12.9	5.0	17.9
Silage + small grains	15.4	5.4	20.8
Ground ear corn	21.7	5.8	27.5

(University of Guelph)

how the other fellow does it

(Continued)

The following day the County Agent, Mr. Norman Smith led the group around his county, which boasted more than 40,000 acres in vegetables, and growing 57 of the usual 59 varieties of commercial crops. The only crops they do not grow are horseradish, and celery, which needs muck soils, which they do not have.

What is claimed to be the largest vegetable farm in the U.S. is that at Seabrook, where they own 10,000 acres and lease another 15,000. At Seabrook also is the largest and original freezer plant for vegetables. The visiting farmers saw one field of more than 100 acres of tomatoes.

Several thousand people work in their fields and plant, many of them from Porto Rico. These get paid from $1.45 to 1.55 per hour, with no overtime. Prefabricated housing is supplied for the worker and his family.

Not far from Bridgeton the group visited a field of 32 acres of canteloups just about ready for harvesting. Fruit up to 4 lbs each were noted, and they were to be shipped to a Montreal broker at a price of 11c per lb. at the farm.

Also near Bridgeton seeded onions were being harvested on the farm of Dicks Brothers. He grows around 100 acres of onions, usually 20% sets (which had already been harvested) and the remainder seeded. Last year Mr. Dicks had won the State medal, with a crop of onions yielding 600 — 50 lb bags per acre.

From Mr. Dicks and others the Quebec growers learned much about herbicides and fungicides, both for pre-emergent and post-emergent sprays. Dactol (wettable) at 8 lbs. per acre is replacing some others, while Tenoran (W) is used as a post-emergent at 3 lbs., per acre, and is easy on the foliage. Dyrene (W.) is replacing other fungicides against mildew on onions, at 3 lbs. per acre. Mr. Dicks has planes spray his onions with Dyrene at a cost for spraying only of $2.50 per acre, which is simpler and cheaper than using his own equipment, and easier on the crop.

In Bridgeton Mr. Smith led the group to an onion packing plant, where more than 350 — 50 lb. bags were going through for shipment to Hardee Farms, south of Montreal.

The Laval growers came home convinced that they have a real challenge from the New Jersey farmers. In addition to a longer growing season (they do get snow but no below zero weather in winter) the southern growers are using more mechanization, sprays, and irrigation. The Quebec group got many ideas from their trip.

Among these was their need for a central wholesale and retail market in their local area.

While urban sprawl has taken some of their good garden crop land, they still believe they can profit by their own local market, to sell fresh vegetables to the 225,000 people now living in the city of Laval, on Ile Jesu, just north of the metropolis of Montreal.